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Pidgeon, Aileen M.; Pickett, Louisa

*Published in:*  
European Scientific Journal

*DOI:*  
[10.19044/esj.2017.v13n12p%25p](https://doi.org/10.19044/esj.2017.v13n12p%25p)

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*Recommended citation(APA):*  
Pidgeon, A. M., & Pickett, L. (2017). Examining the differences between university students' levels of resilience on mindfulness, psychological distress and coping strategies. *European Scientific Journal*, 13(12), 103-113.  
<https://doi.org/10.19044/esj.2017.v13n12p%25p>

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# **Examining the Differences Between University Students' Levels of Resilience on Mindfulness, Psychological Distress and Coping Strategies**

***Aileen M. Pidgeon A/ Professor Psychology PhD (Clin)  
Louisa Pickett BSS (Hon)***

Bond University, Department of Psychology QLD Australia

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## **Abstract**

University students can face numerous stressors which can contribute to the development of psychological distress shown to be associated with decreasing completion and retention issues throughout Australian universities (Willcoxson, Cotter, & Joy, 2011). A positive predictor and outcome of successful student coping and adjustment to university and retention outcomes is resilience, the ability to cope in difficult situations and bounce back from adversity. Mindfulness has also been shown to promote resilience. The present study examined differences in psychological distress, mindfulness, and coping strategies (adaptive vs. maladaptive) in university students (N = 122) with high and low levels of resilience. The results of a one-way MANOVA were consistent with hypotheses, revealing higher resilience scores were associated with greater mindfulness, higher adaptive coping scores, lower maladaptive coping, and reduced psychological distress. Students in the low resilience group were also found to have significantly lower levels of mindfulness, higher levels of psychological distress, reduced use of adaptive coping, and greater use of maladaptive coping, when compared to students with high resilience levels. Overall, findings of the current study are consistent with previous research and highlight the potential benefit of mindfulness-based coping interventions to foster resilience in university students.

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**Keywords:** Resilience, Mindfulness, Coping, Psychological Distress

## **Introduction**

Attending university is widely acknowledged to be a stressful psychosocial event, as students navigate the process of adapting to new social and educational environments. Often students successfully achieve the transition to university, some individuals experience long-term emotional maladjustment and depressive symptomatology (Gall, Evans, & Bellerose,

2000; McCann & Hicks, 2011). Unfortunately, this can result in students withdrawing from their studies, with a considerable number of these students failing to return to university to obtain higher education (Willcoxson, Cotter, & Joy, 2011).

In recent years, Australian universities have faced numerous challenges including reduced funding, growing competition, increased student diversity, and changes to higher education policy. As a result, student retention rates have become an issue, particularly when the attrition rate experienced by Australian universities between 2001 and 2011 was approximately 20 percent per annum (Department of Industry, 2013). This is not only a considerable concern at an individual and societal level, but also represents a significant threat to institutional finances.

As a result, there has been considerable focus on identifying and understanding the factors pertinent to student retention, including university specific factors (e.g., academic and social support, student engagement, social climate) and intra-individual factors such as resilience. By gaining a greater understanding of the factors and qualities that may promote positive adjustment and successful transition into the university environment, despite risk and adversity, it is hoped retention rates can be increased through offering students additional support in these areas.

Resilience has been associated with the motivational drive to recover from adversity, highly disruptive events, and maintain a relatively stable, healthy level of psychological and physiological functioning (Abbott, Klein, Hamilton, & Rosenthal, 2009; Herrman, Stewart, Diaz-Granados, Berger, Jackson, & Yuen, 2011; Steinhardt & Dolbier, 2008). Definitions of resilience in university environments have focused on indicators of success and achievement, with recent research considering resilience as the ability to succeed in spite of difficulties (Munro & Pooley, 2009; Sarwar, Inamullah, Khan, & Anwar, 2010).

Demanding workloads, academic pressure, social changes, financial responsibilities and balancing work/life demands have the potential to act as acute stressors for university students (McCann & Hicks, 2011; Park & Adler, 2003). Research has clearly demonstrated that increased resilience improves an individual's ability to handle and recover from setbacks and challenges (Abbott et al., 2009; Reivich & Shatte, 2002). In general, developing positive human strengths and enhancing resilience has been associated with reductions of psychological distress, particularly anxious and depressive symptomatology (Steinhardt & Dolbier, 2008).

Researchers suggest that resilience is not a set trait, preferring to consider the concept as a developmental process that can be enhanced by learning underlying skills or strengthening protective factors associated with resilience (Cooper, Flint-Taylor & Pearn, 2014). Among university students

resilience has been shown to be a significant and unique predictor of successful coping (McLafferty, Mallett & McCauley, 2009); and higher levels of resilience associated with lower levels of psychological distress (Abbott et al., 2009; Steinhardt & Dolbier, 2008).

Previous research has indicated, university students are a population vulnerable to experiencing high levels of perceived stress and psychological distress (Larcombe et al., 2016; Stallman, 2008; 2010). According to Stallman (2010), psychological health problems that result from elevated stress, anxiety, and depression are also most frequently observed between the ages of 18 to 34 years. Interestingly, this is the target age group that the Australian government is focused on to improve tertiary education outcomes over the next 15 years (Australian Government, 2009). In addition to the younger generation of students, who may experience difficulty transitioning from high school to the university environment, mature aged university students also experience a range of stressors including the competing demands of family, university and work commitments, and financial pressures (Paspaliaris & Hicks, 2010; Stallman, 2010). Research suggests building resilience in university students (both younger and mature-aged students) would prevent impairment, given the association between higher levels of resilience and lower levels of psychological distress demonstrated in various studies (Abbott et al., 2009; McCann & Hicks, 2011; Steinhardt & Dolbier, 2008). However, despite the need to identify and foster the resilience of university students, few studies have explored the resilience characteristics of university students.

Mindfulness is a skill that enhances adaptive coping in response to stressful events via self-regulation of attention toward the immediate experience and fostering an openness and acceptance toward an individual's experience in the present (Bishop et al., 2004). Previous research has demonstrated many positive outcomes associated with enhanced mindfulness, particularly improvement of psychological well-being, mood regulation (Brown & Ryan, 2003; Kabat-Zinn, 1990) and resilience (Coholic, 2011; Orzech, Shapiro, Brown & McKay, 2009).

Coping is defined as a psychological process in which an individual attempts to manage external or internal demands (Lazarus & Folkman, 1984), through a range of positive (e.g., problem solving, seeking social support, reappraisal) and negative (e.g., avoidance, aggression) strategies (Sinha, Willson & Watson, 2000). According to Sullivan (2010), academic coping strategies are generally categorized into three groups: approach (i.e., active attempts to change or prepare for the emotional reaction of a stressful event), avoidance (i.e., no genuine attempt to acknowledge or prepare for the perceived stressor), and social support (i.e., obtaining support from others to assist with the problem or manage the emotional response). Among

university students research has shown that avoidant coping strategies have been associated with low psychological well-being and adaptive coping strategies (e.g., positive reappraisal and planned problem solving) were associated with greater psychological well-being (Park & Adler, 2003).

The current study aimed to expand our understanding of the characteristics of resilience in university students by examining the differences between students reporting high and low resilience on mindfulness, psychological distress and academic coping strategies. It was predicted that in comparison to university students reporting a high level of resilience, university students with a low level of resilience would report significantly higher levels of psychological distress, lower levels of mindfulness, a greater number of maladaptive coping strategies, and fewer adaptive coping strategies.

Participants were university students ( $N = 122$ ) from a range of Australian universities, aged 18 to 47 years ( $M = 23.52$ ,  $SD = 6.90$ ), who were currently enrolled in tertiary level education. Males comprised 18 percent of the sample ( $n = 22$ ), while females comprised 82 percent ( $n = 100$ ). Of the 122 students, the majority ( $n = 100$ ) were undertaking undergraduate studies (82%), while 10 (8.2%) were completing post-graduate courses, six (4.9%) were enrolled in a university foundation program, four (3.3%) were undertaking a masters degree, and two (1.6%) were completing a PhD.

The Resilience Factor Inventory (RFI; Reivich & Shatte, 2002) was used to measure resilience. The RFI is a self-report scale, comprised of 60-items measuring an individual's current level of resilience across seven domains of resilience. For the purpose of analysis an average score was used, which functioned as an overall resilient quotient (RQ). A higher score was indicative of a greater level of general resilience. Each RQ was then classified as high or low by visual binning of the scores. Using a mean RQ score of 61.43, high ( $n = 59$ ) and low ( $n = 63$ ) resilience groups were created from the continuous scale variables. According to Reivich and Shatte (2002), the RFI is a valid and psychometrically sound instrument with established criterion and predictive validity.

The Depression Anxiety Stress Scales (DASS-21; Lovibond & Lovibond, 1995) was utilized to measure psychological distress across three domains, depression, anxiety and stress. Although the three-factor structure of the DASS-21 has been supported in previous research, some research has also indicated an overall level of psychological distress can be measured by calculating a total scale for the entire scale. Higher scores were indicative of greater psychological distress. Previous research has found the DASS-21 to be a valid and psychometrically sound instrument (Antony, Bieling, Cox, Enns, & Swinson, 1998; Brown, Chorpita, Korotitsch, & Barlow, 1997).

The Academic Coping Strategies Scale (ACSS; Sullivan, 2010) is a self-report scale that measures how frequently a college student endorses a particular coping strategy within the context of a specific academic stressor. The ACSS consists of 34-items evaluating three coping strategies: approach coping (15 items), avoidance coping (11 item), and social support coping (8 items). Consistent with Sullivan (2010), the mean scores of the approach and social support subscales were summed and divided by two to create adaptive coping. The mean score of the avoidant subscale was renamed maladaptive coping, as recommended by Sullivan (2010). Higher scores for each of the subscales were indicative of a greater endorsement of a particular coping strategy. Research indicates the ACSS is a valid and psychometrically sound instrument with good internal consistencies for the three subscales .91, .82. and .81, respectively.

Participants were recruited through various advertisements, including an information sheet on a university research board and announcements on social media network sites. Respondents were then contacted via email and provided a link to the online questionnaire. Once informed consent was obtained, participants were asked to complete a series of demographic items and a range of psychometric questionnaires measuring levels of resilience, mindfulness, psychological distress, and academic coping.

The data were analysed using SPSS version 22. An alpha level of .05 was utilised to determine the statistical significance of all results. Pearson-product bivariate correlations were performed to examine the simple relationships amongst the key variables of interest. As can be seen in Table 1, moderate significant correlations were observed between all key variables, with the exception of a negative association between mindfulness and maladaptive coping strategies, which failed to reach significance. The highest correlation was observed between resilience and mindfulness. Resilience was also significantly and moderately correlated with adaptive coping and significantly negatively correlated with maladaptive coping. A significant inverse relationship was observed between resilience and psychological distress. Mindfulness and adaptive coping were significantly associated, while mindfulness and psychological distress were significantly negatively correlated. As expected, a significant positive relationship was observed between psychological distress and maladaptive coping and a significant inverse relationship was found between psychological distress and adaptive coping.

Table 1  
Intercorrelations between Resilience, Adaptive and Maladaptive Coping, Mindfulness and Psychological Distress (N = 122).

Variable 1	2	3	4	5
1. Resilience	–			
2. Adaptive Coping	.35**	–		
3. Maladaptive Coping	-.40**	-.13	–	
4. Mindfulness	.50**	.35**	-.09	–
5. Psychological Distress	-.39**	-.18*	.38**	-.43**

Note. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

A one-way between-subjects multivariate analysis of variance (MANOVA) was performed to test the hypothesis that levels of mindfulness, academic coping strategies, and symptomatology of psychological distress would be significantly different between the high resilience and low resilience student groups. With the use of Wilk's criterion, a statistically significant multivariate main effect was observed for group  $F(4, 116) = 10.48$ ,  $p < .001$ ,  $\eta^2 = .27$ , power = 1.00, indicating the two levels of resilience differed on the four dependent variables (mindfulness, psychological distress, adaptive coping strategies, and maladaptive coping strategies) combined.

Univariate analyses revealed a significant difference between groups on mindfulness  $F(1, 119) = 19.48$ ,  $p < .001$ ,  $\eta^2 = .14$ , power = .99. As expected, university students with low resilience reported significantly lower levels of mindfulness ( $M = 32.89$ ,  $SD = 5.53$ ), compared to university students with high resilience ( $M = 37.81$ ,  $SD = 6.72$ ). Univariate analyses revealed a significant difference between groups on psychological distress  $F(1, 119) = 12.04$ ,  $p = .001$ ,  $\eta^2 = .09$ , power = .93, with students with low resilience levels reporting significantly greater levels of psychological distress ( $M = 36.13$ ,  $SD = 23.24$ ) compared to students with high resilience ( $M = 23.25$ ,  $SD = 16.91$ ). Univariate analyses revealed a significant difference between groups on adaptive coping  $F(1, 119) = 10.30$ ,  $p = .002$ ,  $\eta^2 = .08$ , power = .89. As expected, adaptive coping strategies were significantly lower in students with a low level of resilience ( $M = 3.20$ ,  $SD = .48$ ), compared to students reporting high resilience ( $M = 3.47$ ,  $SD = .43$ ).

Univariate analyses also revealed a significant difference between groups on maladaptive coping  $F(1, 119) = 22.33$ ,  $p < .001$ ,  $\eta^2 = .16$ , power = .98. Consistent with expectations, students with low resilience levels reported significantly higher scores on the maladaptive coping strategy subscale ( $M = 3.01$ ,  $SD = .46$ ), compared to students in the high resilience group ( $M = 2.64$ ,  $SD = .40$ ).

The present study contributes to the growing body of literature investigating potential intra-individual characteristics that may impact successful transition in tertiary education settings. The results, which supported the prediction, indicated a significant proportion of the variance in the resilience of university students was accounted for by mindfulness, academic coping strategies, and psychological distress. Consistent with previous research (e.g., Foureur, Besley, Burton, Yu & Crisp, 2013; Lighttsey, 2006; Orzech et al., 2009), a significant positive relationship between resilience and mindfulness was observed, with higher resilience related to greater levels of mindfulness. Resilience was also significantly associated with adaptive academic coping, in line with previous research (e.g., McLafferty et al., 2009), which demonstrated that higher rates of resilience were the best predictor of successful coping in university students.

A significant positive association was also found between mindfulness and adaptive coping strategies, indicating higher levels of mindfulness were associated with adaptive coping strategies. This finding is reflective of current literature suggesting mindfulness fosters rational coping styles, which are viewed as adaptive (Palmer & Rodger, 2009). Palmer and Rodger (2009) also found mindfulness was significantly and inversely related to maladaptive coping strategies such as avoidant coping styles; however, no significant association between mindfulness and maladaptive coping strategies was observed in the current study, inconsistent with expectations. Mindfulness and psychological distress were found to be significantly and negatively correlated, consistent with the positive outcomes associated with enhanced mindfulness detailed in previous research (Brown & Ryan, 2003; Kabat-Zinn, 1990; Palmer & Rodger, 2009).

A significant inverse relationship was observed between resilience and psychological distress (depression, anxiety, and stress). This finding was consistent with previous research that demonstrated a significant association between increased resilience and prevention of depression, anxiety, and adjustment disorders (Gillham et al., 2006). A negative association was also observed between psychological distress and adaptive academic coping strategies and a positive association with maladaptive academic coping strategies. These findings were also consistent with previous literature reporting individuals with less psychological distress utilise more adaptive coping strategies, whereas individuals with a higher level of depression, anxiety, and stress report use of more maladaptive coping strategies (Holahan & Moos, 1987; Watson & Sinha, 2008).

When examining the differences in mindfulness, psychological distress, and coping strategies (adaptive and maladaptive) in students with high levels of self-reported resilience compared to students with low levels of self-reported resilience, significant effects were observed for each



dependent variable. As expected, significantly lower levels of mindfulness were reported in the low resilience group. Previous research conducted by Coholic (2011) suggested that mindfulness acts as a protective characteristic that facilitates resilience; therefore it is possible a low level of resilience may be partially attributed to lack of mindfulness. This finding also supports the suggestion resilience can be enhanced by bolstering positive characteristics associated with resilience, such as mindfulness, highlighting the potential benefit of mindfulness-based programs for university students at a prevention and treatment level.

Significantly higher levels of psychological distress were also observed in the low resilience group, supporting the association between resilience and psychological well-being in literature (Abbott et al., 2009; Steinhardt & Dolbier, 2008). Furthermore, university students with low resilience were also found to endorse a significantly greater level of maladaptive coping strategies and significantly less adaptive coping strategies than the university students who reported high resilience. These findings were consistent with McLafferty et al. (2009), which found an association between increased resilience and successful coping in academic settings. Considered in combination with previous research, the present findings highlight the potential benefit of mindfulness-based coping interventions to foster resilience in university students experiencing multiple stressful demands and may be at risk of prematurely exiting the university environment.

Previous research demonstrated that resilience training and interventions need not be lengthy or time consuming (Abbott et al., 2009). As internet access is readily available at all universities, delivering resilience training online provides a flexible and cost-effective option. However, additional research is required to evaluate the effectiveness of internet-based resilience training (Abbott et al., 2009). Undoubtedly, the stress of university life may inhibit students' availability to dedicate an appropriate amount of time to such a program and communicating the importance and benefits of resilience is also likely to be challenging. Additional studies may be required to determine the most effective method to promote adherence and increase student's motivation to undertake a resiliency-training program.

Despite the promising findings from the current study, certain limitations are noted. First, participants' previous experience with mindfulness and meditation was not taken into account. Research has indicated frequent meditation is significantly associated with higher levels of mindfulness (Brown & Ryan, 2003; Walach et al., 2006); therefore it is possible this may have affected results and should be controlled for in future studies. Second, although a-priori power analyses using G\*Power indicated the sample size was adequate for power and capable of detecting a large

effect, the sample size was small and is unlikely to be representative of the wider student population across Australia. However, results were consistent with previous studies. Future research should attempt to investigate resilience in university students using a larger national sample to increase external validity.

Overall, the current study has revealed university students with a higher level of resilience reported significantly higher levels of mindfulness, greater use of adaptive coping strategies, reduced maladaptive coping, and lower levels of psychological stress, when compared to students with low resilience levels. These findings provide preliminary insight into the potential benefits of cultivating resilience in university students (possibly via on-campus or online programs) and facilitating adaptive coping strategies and mindfulness, which are intrinsically linked to navigating change and adversity without the deleterious effects of psychological distress.

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